

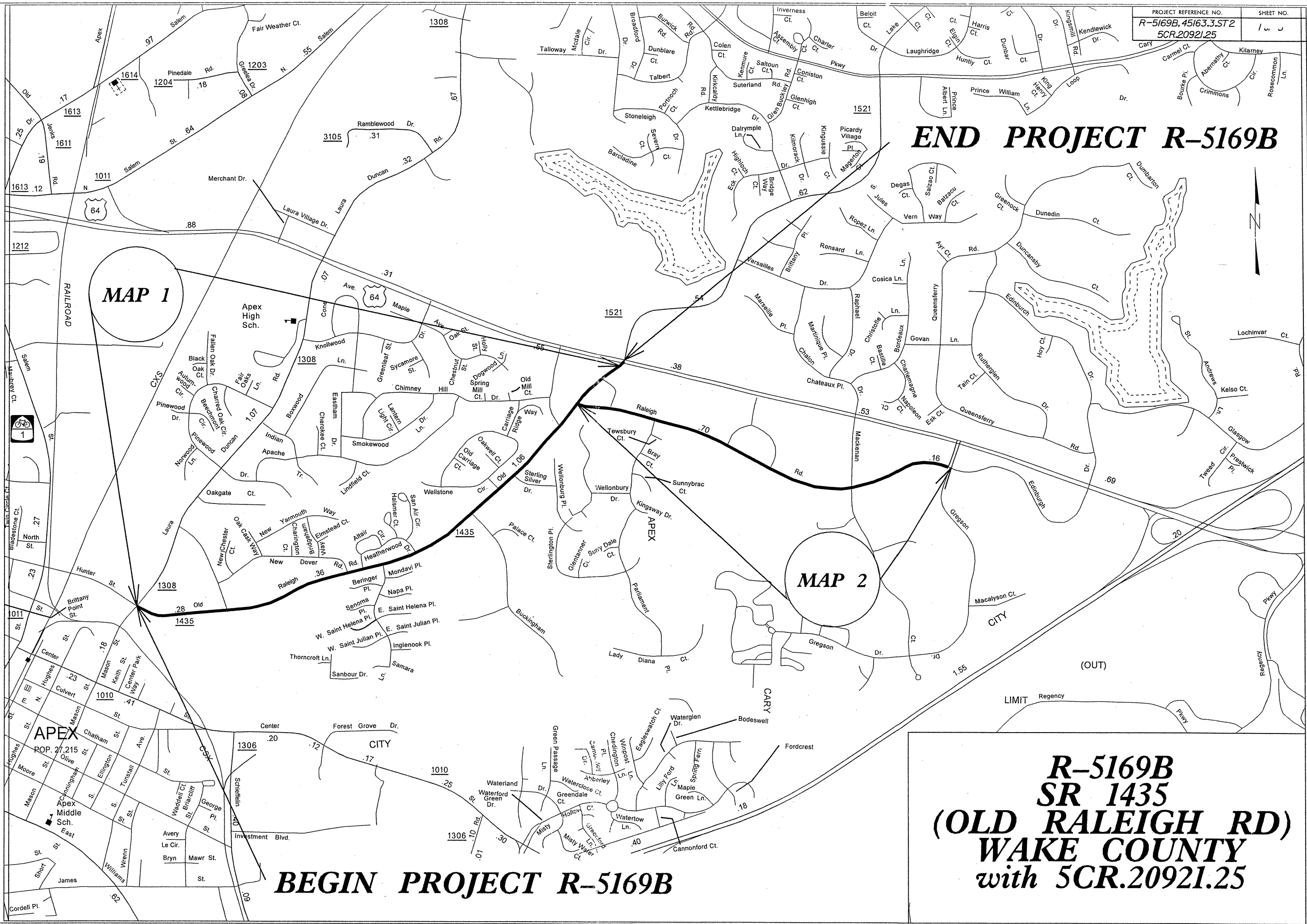
END PROJECT R-5169B

MAP 1

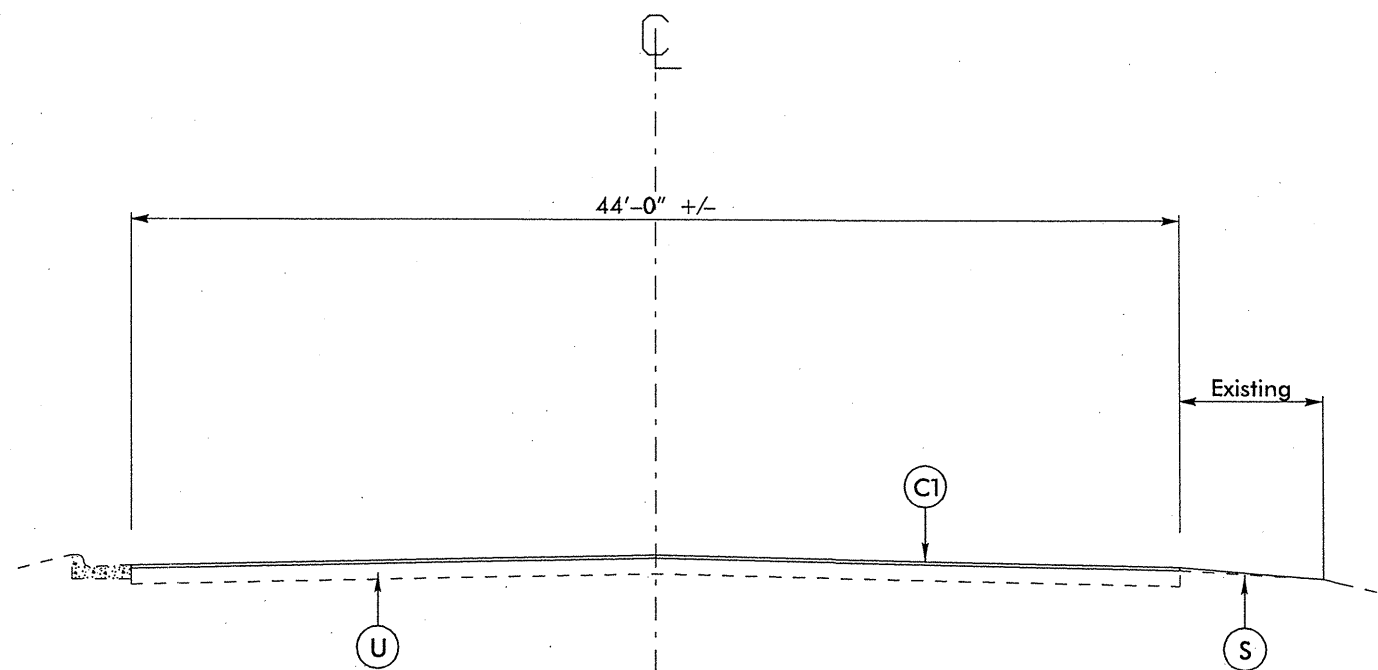
MAP 2

BEGIN PROJECT R-5169B

**R-5169B
SR 1435
(OLD RALEIGH RD)
WAKE COUNTY
with 5CR.20921.25**



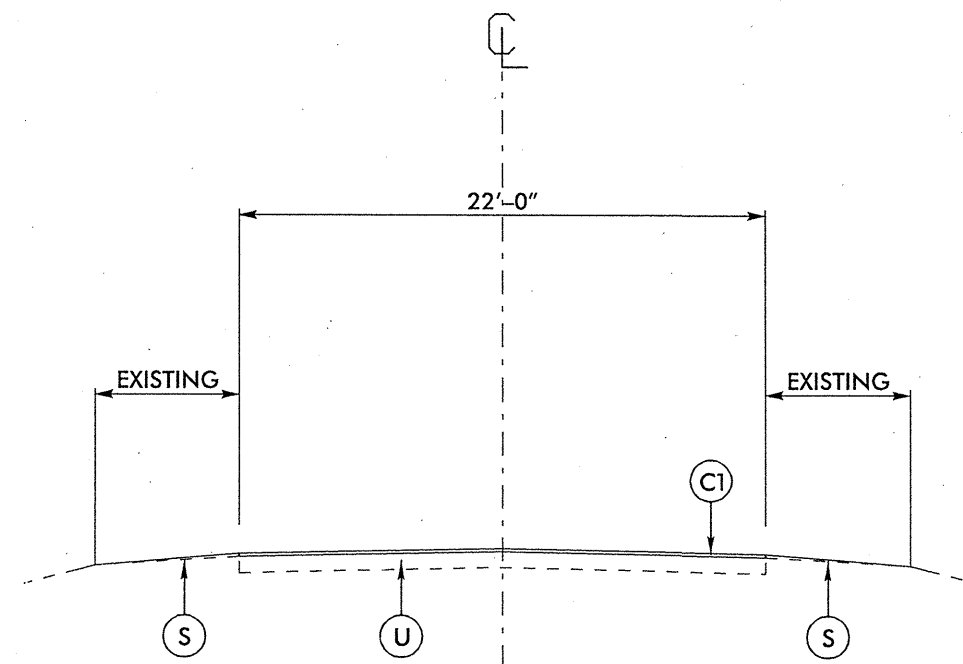
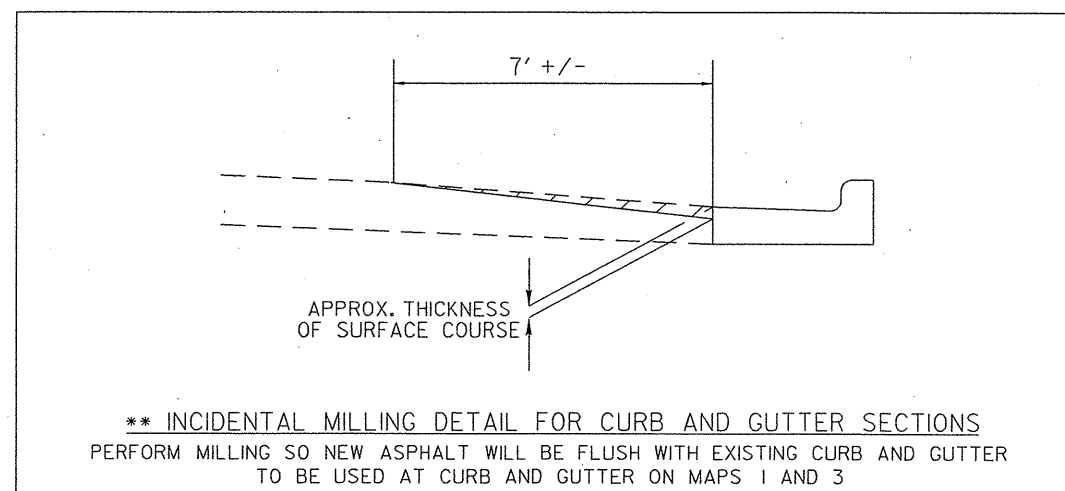
PAVEMENT SCHEDULE	
C1	1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
D1	2.5 " ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
S	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V1	MILL 2.5" IN DEPTH
V2	MILL 2" IN DEPTH



TYPICAL SECTION NO. 1

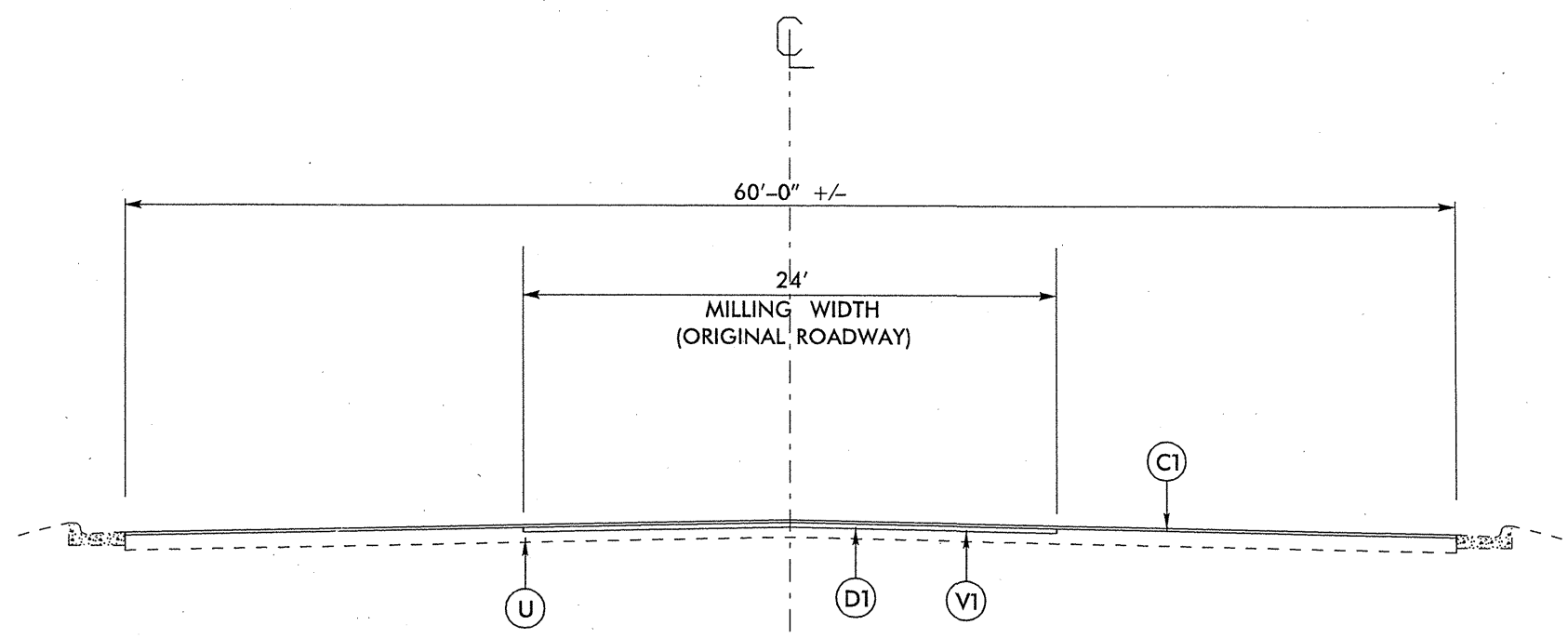
NOTES

ALL UNPAVED S.R. ROADS TO BE RESURFACED 50' FROM EDGE OF PAVEMENT OF MAIN PROJECT
 ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADI, OR AS DIRECTED BY THE ENGINEER.
 EDGES, PAVEMENT WIDENING, INTERSECTIONS AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES.
 BRIDGES TO BE RESURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY THE ENGINEER.

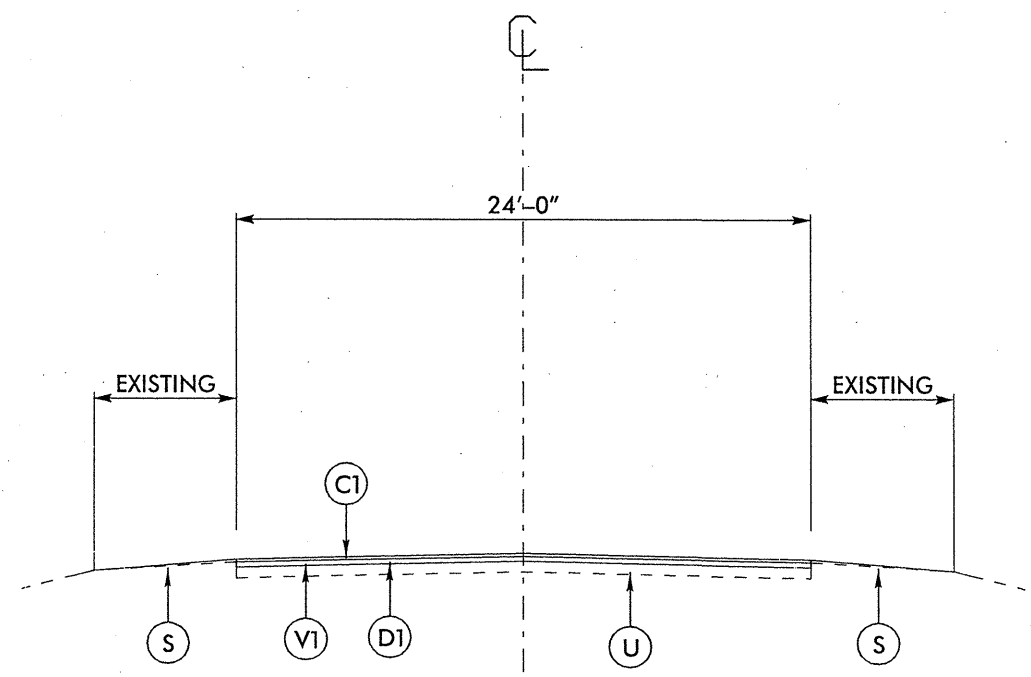
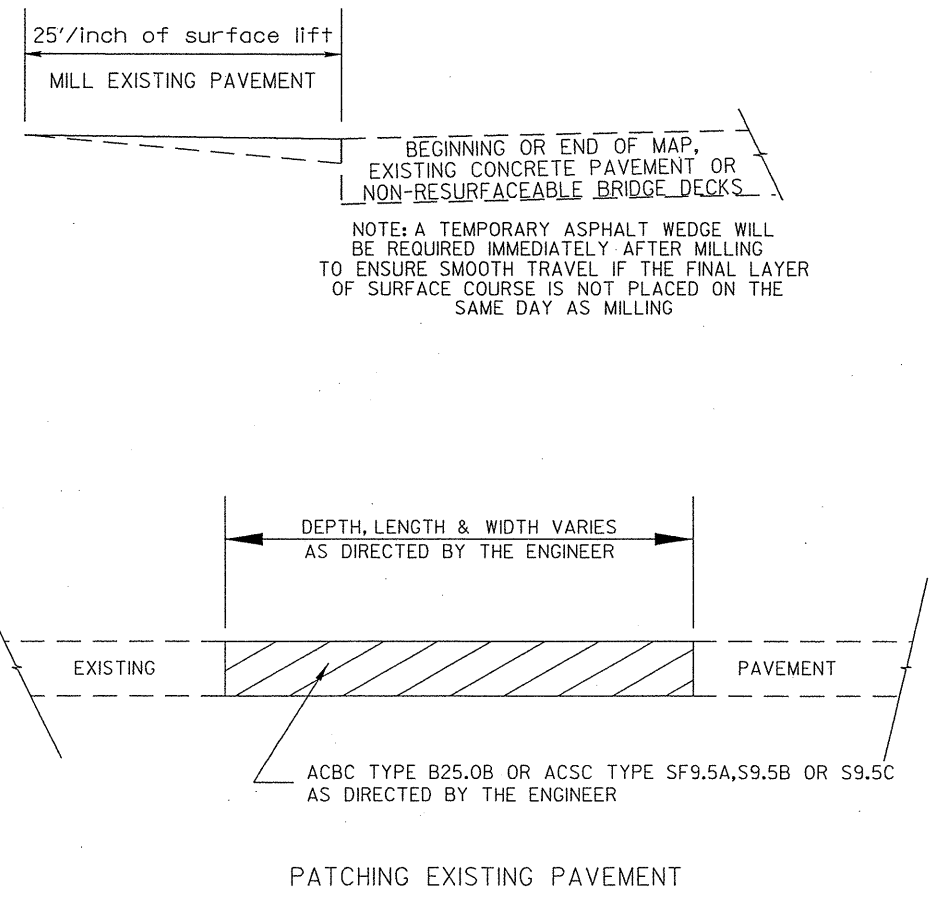


TYPICAL SECTION NO. 2

PAVEMENT SCHEDULE	
C1	1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
D1	2.5 " ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
S	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V1	MILL 2.5" IN DEPTH
V2	MILL 2" IN DEPTH

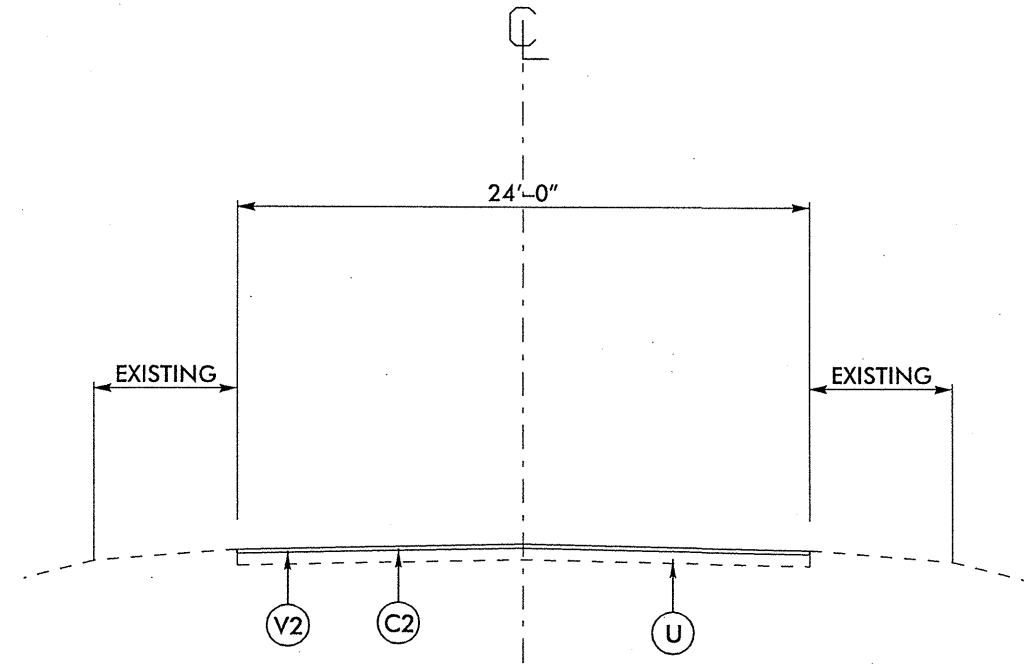


TYPICAL SECTION NO. 3

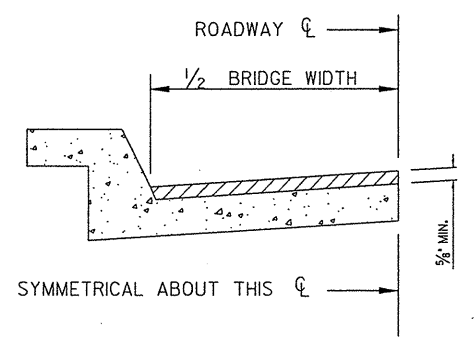


TYPICAL SECTION NO. 4

PAVEMENT SCHEDULE	
C1	1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
D1	2.5 " ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
S	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V1	MILL 2.5" IN DEPTH
V2	MILL 2" IN DEPTH



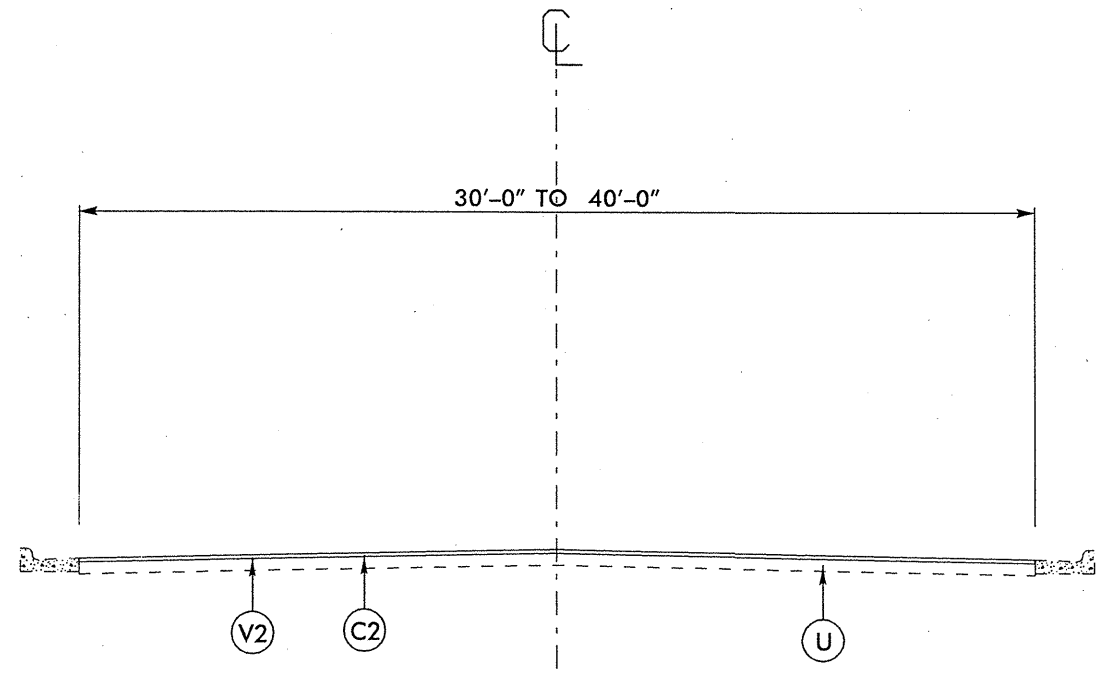
TYPICAL SECTION NO. 5



BRIDGE HALF TYPICAL SECTION

FOR BRIDGES WITH FLOOR DRAINS, CARE SHALL BE EXERCISED IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE. ALL DRAINS SHALL BE LEFT OPEN.

THE PROPOSED WEARING SURFACE SHALL VARY IN THICKNESS AS NECESSARY TO PROVIDE A SMOOTH RIDING SURFACE. A THICKNESS OF NOT LESS THAN 5/8" SHALL BE PROVIDED. THE MAXIMUM THICKNESS SHALL PREFERABLY BE 1 1/2" UNLESS IT IS IMPRACTICAL TO PROVIDE A SMOOTH RIDING SURFACE OTHERWISE.



TYPICAL SECTION NO. 6

PROJECT NO.	SHEET NO.	TOTAL NO.
45163.3.ST2 (R-5169B) & 5CR.20921.25	5	

SUMMARY OF QUANTITIES

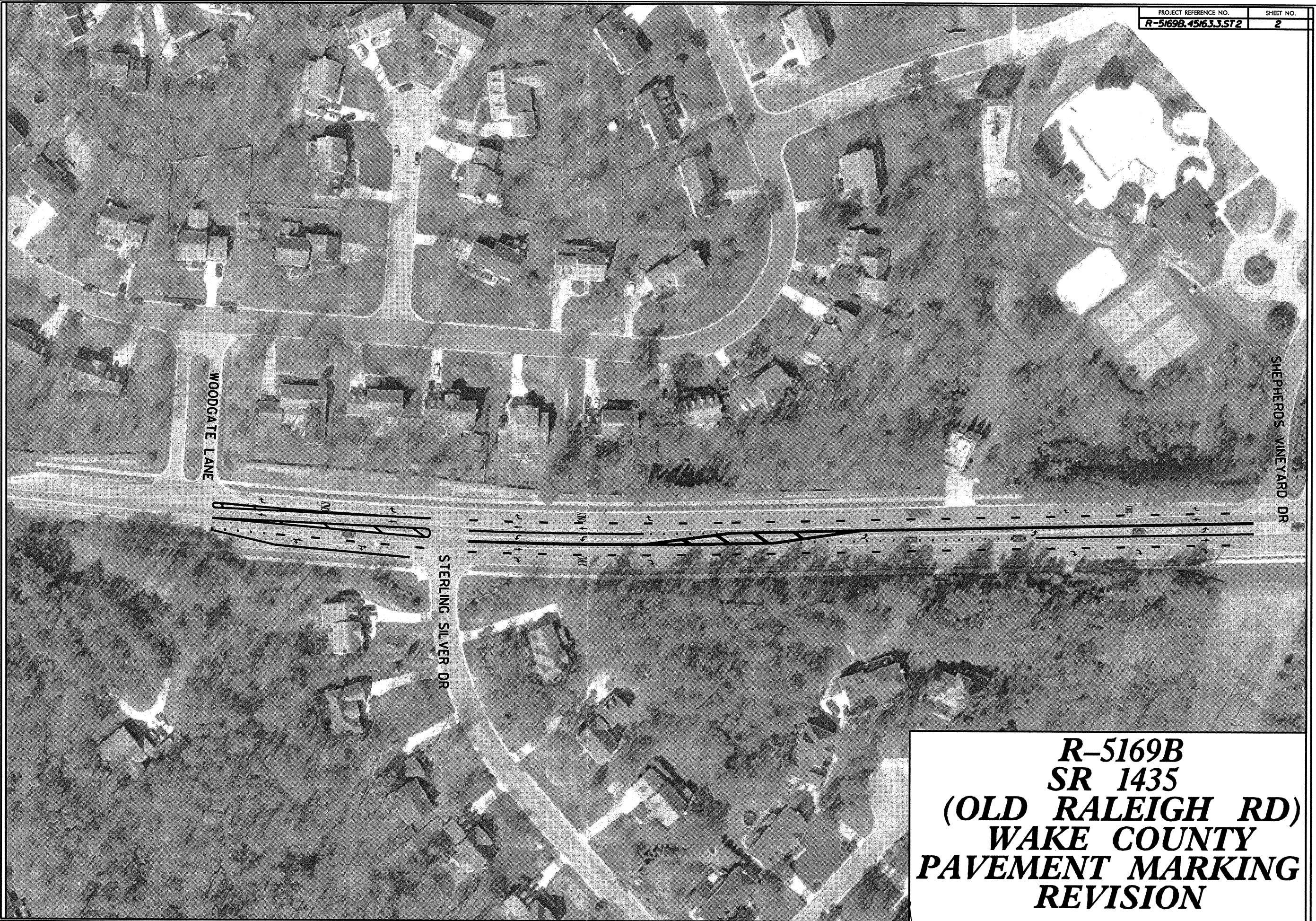
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	SHOULDER RECONSTRUCTION SMI	2 1/2" MILLING SY	2" MILLING SY	INCIDENTAL MILLING SY	INTER-MEDIATE COURSE, 119.0B TONS	SURFACE COURSE, S9.5B TONS	PG 64-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	ADJUST MANHOLES EA	ADJUST METER OR VALVE BOX EA	SEED & MULCHING AC	INDUCTIVE LOOP LF
45163.3.ST2	Wake	1	SR 1435 (OLD RALEIGH RD)	FROM MASON ST TO APEX PEAKWAY	1	NO	0.34	44	0.3			2417		860	52	100	2	5	0.20	816
		"	"	FROM APEX PEAKWAY TO NEW DOVER	2	NO	0.26	22	0.52					315	19	100			0.38	
		"	"	FROM NEW DOVER TO SR 1521 (LAKE PINE DR)	3,4	NO	0.8	24 - 60	0.42	11788		6635	1760	2,187	214	100	4	10	0.30	
		"	SR 1521 (LAKE PINE DR)	FROM SR 1435 (OLD RALEIGH RD) TO GREGSON DRIVE	2,6	NO	0.15	22 - 40	0.1		2958	264		428	26	50			0.10	576
TOTAL FOR MAP NO. 1							1.55		1.34	11788	2958	9316	1760	3,790	311	350	6	15	0.98	1,392
TOTAL FOR PROJ NO. 45163.3.ST2 R-5169B							1.55		1.34	11788	2958	9316	1760	3,790	311	350	6	15	0.98	1,392
5CR.20921.25	Wake	2	SR 1435 (OLD RALEIGH RD)	FROM SR 1521 (LAKE PINE DR) TO US 64	5,6	NO	1.1	24 - 40			19690			2,428	146	100				
TOTAL FOR MAP NO. 2							1.1		0	0	19690	0	0	2,428	146	100				
TOTAL FOR PROJ NO. 5CR.20921.25							1.1		0	0	19690	0	0	2,428	146	100				
GRAND TOTAL							2.65		1.34	11788	22648	9316	1760	6,218	457	450	6	15	0.98	1,392

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4589000000-N	4685000000-E	4686000000-E		4710000000-E	4721000000-E			4725000000-E			4810000000-E		4835000000-E	4900000000-N		
					TRAFFIC CONTROL LS	4" X 90 M WHITE THERMO LF	4" X 120 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	24" X 120 M WHITE THERMO LF	THERMO MSG ONLY 120 M EA	THERMO MSG STOP 120 M EA	THERMO MSG AHEAD 120 M EA	THERMO STR & RT ARROW 90 M EA	THERMO LT ARROW 90 M EA	THERMO STR ARROW 90 M EA	THERMO RT ARROW 90 M EA	4" YELLOW PAINT LF	4" WHITE PAINT LF	24" WHITE PAINT LF	YELLOW & YELLOW MARKERS EA	CRYSTAL & RED MARKERS EA
45163.3.ST2	Wake	1	SR 1435 (OLD RALEIGH RD)	FROM MASON ST TO APEX PEAKWAY	*	4,560	375	5,700	30				4	11	6				57	10	
		"	"	FROM APEX PEAKWAY TO NEW DOVER	*	3,324													20		
		"	"	FROM NEW DOVER TO SR 1521 (LAKE PINE DR)	*	10,104	2,450	10,973		20			6	10	20	15	10,973		110	25	
		"	SR 1521 (LAKE PINE DR)	FROM SR 1435 (OLD RALEIGH RD) TO US 64	*	1,920	500	1,600	36				3	3					20	20	
TOTAL FOR MAP NO. 1					1	19,908	3,325	18,273	66	20			13	24	26	15	10,973		207	55	
TOTAL FOR PROJ NO. 45163.3.ST2 R-5169B					1	19,908	3,325	18,273	66	20			13	24	26	15	10,973		207	55	
							21,598			20			78			10,973			262		
5CR.20921.25	Wake	2	SR 1435 (OLD RALEIGH RD)	FROM SR 1521 (LAKE PINE DR) TO US 64	*	12,263	360	13,016	75		8	10		9		1	13,016	12,623	75	104	11
TOTAL FOR MAP NO. 2					1	12,263	360	13,016	75		8	10		9		1	13,016	12,623	75	104	11
TOTAL FOR PROJ NO. 5CR.20921.25					1	12,263	360	13,016	75		8	10		9		1	13,016	12,623	75	104	11
							13,376			18			10			25,639			115		
GRAND TOTAL					1	32,171	3,685	31,289	141	20	8	10	13	33	26	16	23,989	12,623	75	311	66
							34,974			38			88			36,612			377		

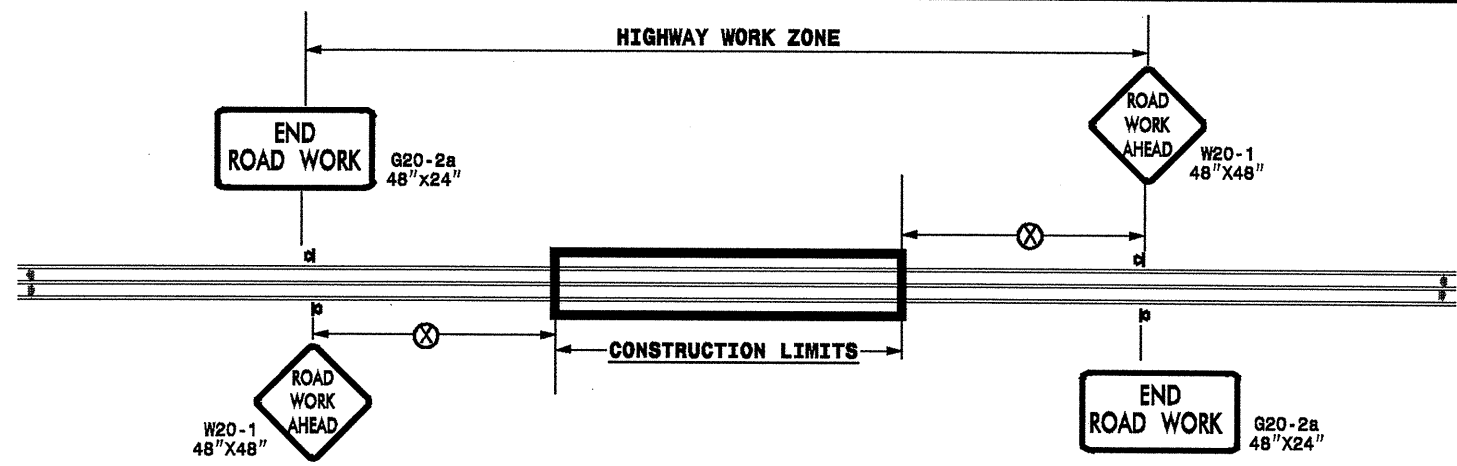


**R-5169B
SR 1435
(OLD RALEIGH RD)
WAKE COUNTY
PAVEMENT MARKING
REVISION**



**R-5169B
SR 1435
(OLD RALEIGH RD)
WAKE COUNTY
PAVEMENT MARKING
REVISION**

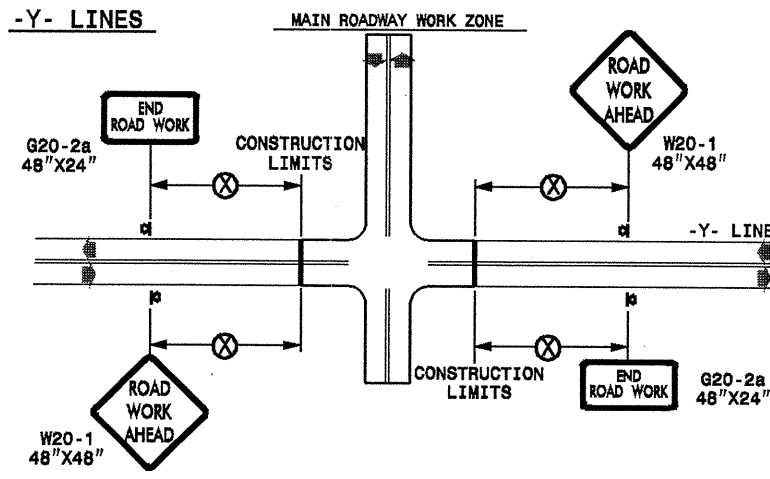
TWO-WAY UNDIVIDED ** (L-LINES)



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING
≤ 50	500'
≥ 55	1000'

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



DETAIL DRAWING
FOR TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS

GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCE WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE PORTABLE WORK ZONE SIGNS ONLY WITH PORTABLE WORK ZONE SIGN STANDS SPECIFICALLY DESIGNED FOR ONE ANOTHER. PORTABLE WORK ZONE SIGNS MAY BE ROLL UP OR APPROVED COMPOSITE.
- PROVIDE PORTABLE WORK ZONE SIGN STANDS, PORTABLE SIGNS AND SIGN SHEETING WHICH ARE LISTED ON THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S APPROVED PRODUCT LIST OR ACCEPTED AS TRAFFIC QUALIFIED BY THE TRAFFIC CONTROL UNIT.
- ** TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

◀ PORTABLE SIGN

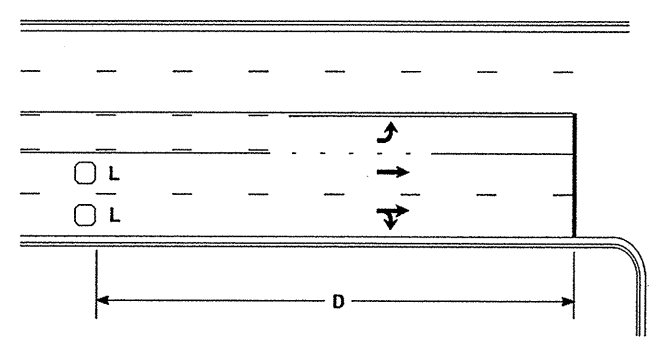
➡ DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1

16-NOV-2009 12:01
sta signing r esur facting 2010\div05\c202505a-b-451633st2x2.r-5169b.wdke_3srs\c202505a-b-451633st2x2.r-5169b-2wayundivurb fr wys july 2006.por table.dgn
pccymor b AT WZ UC 31902

APPROVED: _____	DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED ADVANCED WORK ZONE WARNING SIGNS	SCALE: NONE DATE: _____ DWG. BY: _____ DESIGN BY: _____ REVIEWED BY: _____		REVISIONS 7-98 10/01 10-98 03/04 01/01 11/04
SEAL					

High Speed Detection [≥40 mph (64 km/hr)]

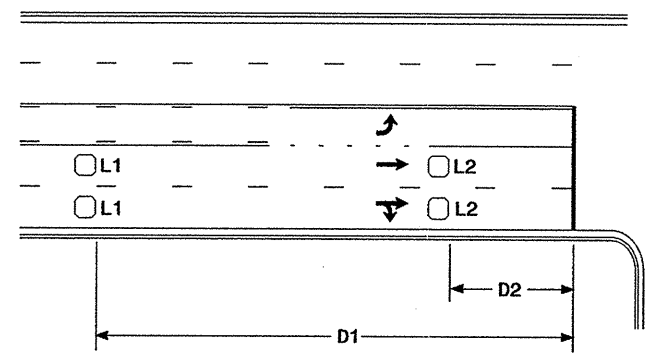


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

L = 6ft X 6ft (1.8m X 1.8m)
Wired in series for TS1
Controllers
Wired separately for TS2,
170, and 2070L Controllers

Volume Density Operation

OR

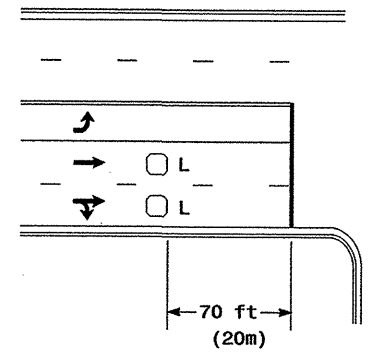


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

L1 = 6ft X 6ft
(1.8m X 1.8m)
Wired in series
L2 = 6ft X 6ft
(1.8m X 1.8m)
Wired in series

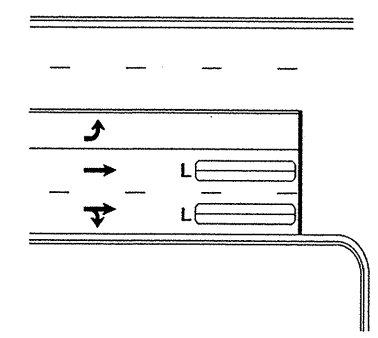
"Stretch" Operation

Low Speed Detection [≤35 mph (56 km/hr)]



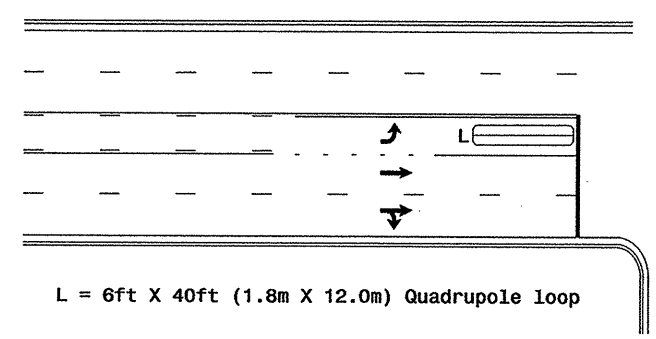
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



L = 6ft X 40ft (1.8m X 12.0m)
Quadrupole loop, wired separately

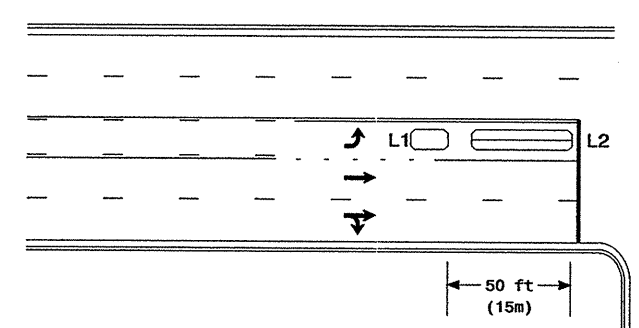
Left Turn Lane Detection



L = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

Presence Loop Detection

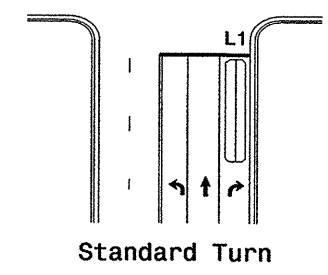
OR



L1 = 6ft X 15ft (1.8m X 4.6m) Queue detector
L2 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

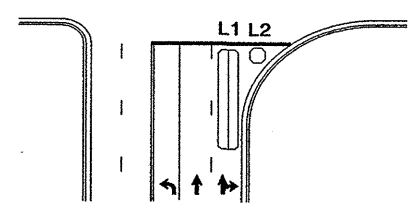
Queue Loop Detection

Right Turn Lane Detection

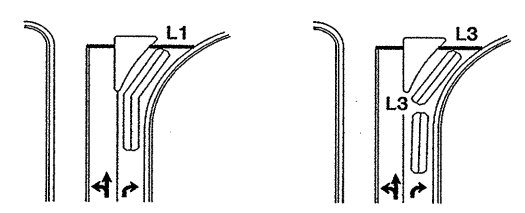


Standard Turn

L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
Wired separately
L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop
Wired in series

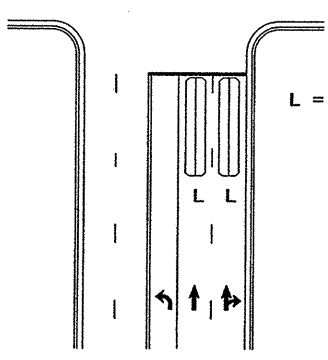


Wide Radius Turn



Channelized Turn

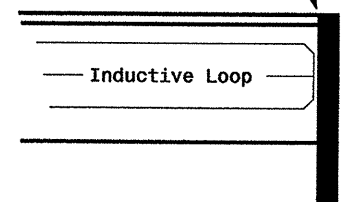
Side Street Detection



L = 6ft X 40ft (1.8m X 12.0m)
Quadrupole loop
Wired to separate
detectors/channels

Presence Loop Placement at Stop Lines

Locate loop slightly
behind leading
edge of stop line



Note:
Loop may be located in advance
of stop line when stop line is
greater than 15' (4.5m) from edge
of intersecting roadway; or, when
loop detects a permissive or
protected/permissive left turn.

Recommended Number of Turns

Single 6' X 6' (1.8m X 1.8m)
loop (wired separately):

Length of Lead-in ft (m)	Number of Turns
< 250 (75)	3
250-375 (75-115)	4
375-525 (115-160)	5
> 525 (160)	6

Quadrupole loops: Use 2-4-2 turns

6' X 15' (1.8m X 4.6m) Loops:
Lead-in < 150' (45 m), use 2 turns
Lead-in > 150' (45 m), use 3 turns

Prepared in the Office of:
Public Works and Safety Services
STATE OF NORTH CAROLINA
Department of Transportation
Traffic and Geometrics Section
122 N. McDowell St., Raleigh, NC 27603

SCALE
N/A

Typical Loop Locations

PLAN DATE: June 2006	REVIEWED BY:
PREPARED BY: P L Alexander	REVIEWED BY:

REVISIONS
1. Revise pavement markings

SIGNATURE: [Signature]
DATE: 6/6/06

SIG. INVENTORY NO.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

11-08

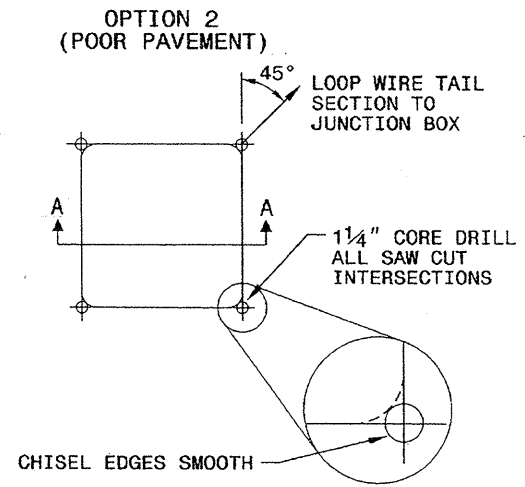
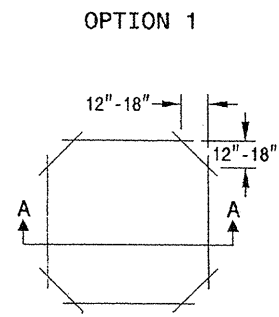
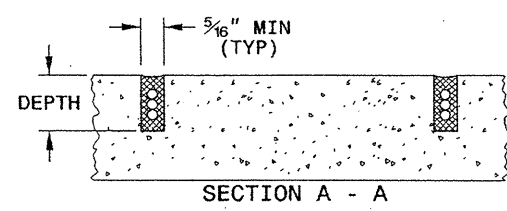
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

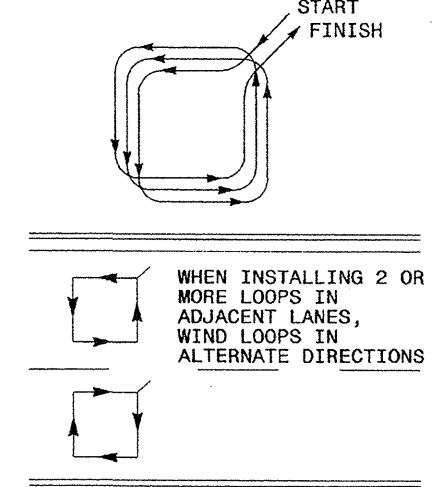
CONVENTIONAL 4-SIDED LOOP
SAW CUT OPTIONS

SAW SLOT DEPTH CHART

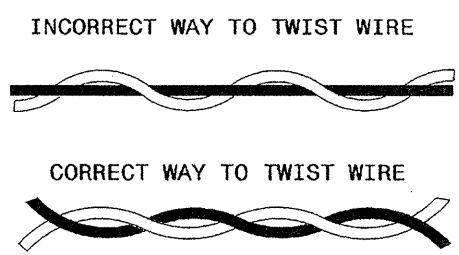
DEPTH (IN)	NO. OF WIRE TURNS					
	2	3	4	5	6	
CONCRETE	2.0	2.0	2.5	2.5	3.0	
ASPHALT	2.0	2.5	3.0	3.0	3.0	



LOOP WINDING METHOD



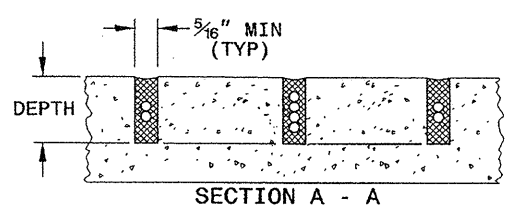
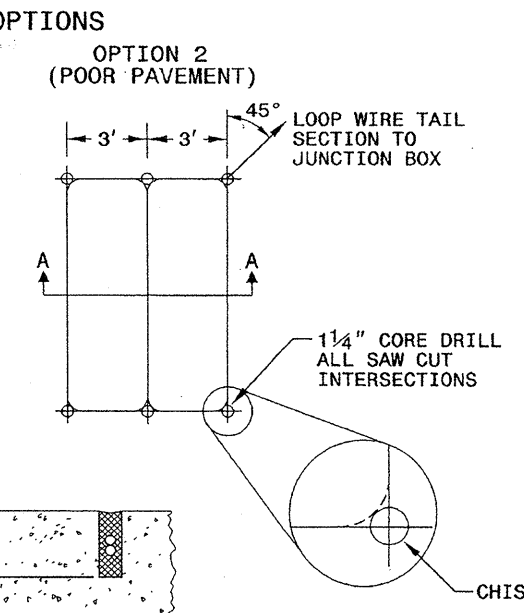
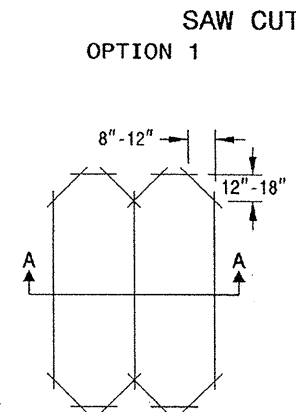
LOOP WIRE TWISTING METHOD



NOTES

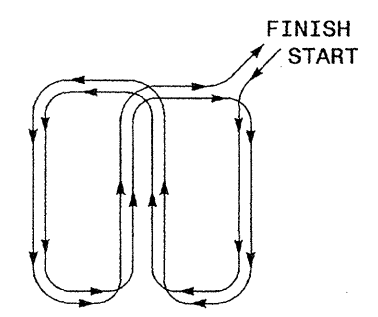
- OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.
- MAINTAIN 12" SPACING BETWEEN LOOP WIRE TAIL SECTIONS.
- WIRE LOOPS CONNECTED TO THE SAME DETECTOR CHANNEL IN SERIES.
- LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS OR APPROVED BY ENGINEER.

QUADRUPOLE LOOP
SAW CUT OPTIONS



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

LOOP WINDING METHOD



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

SIGNATURE: *Matthew J. Dean* DATE: 11/24/08

24-Nov-2008 09:28
d:\work\files\std\standard plate sheets\1725D01.dgn
11/11/08

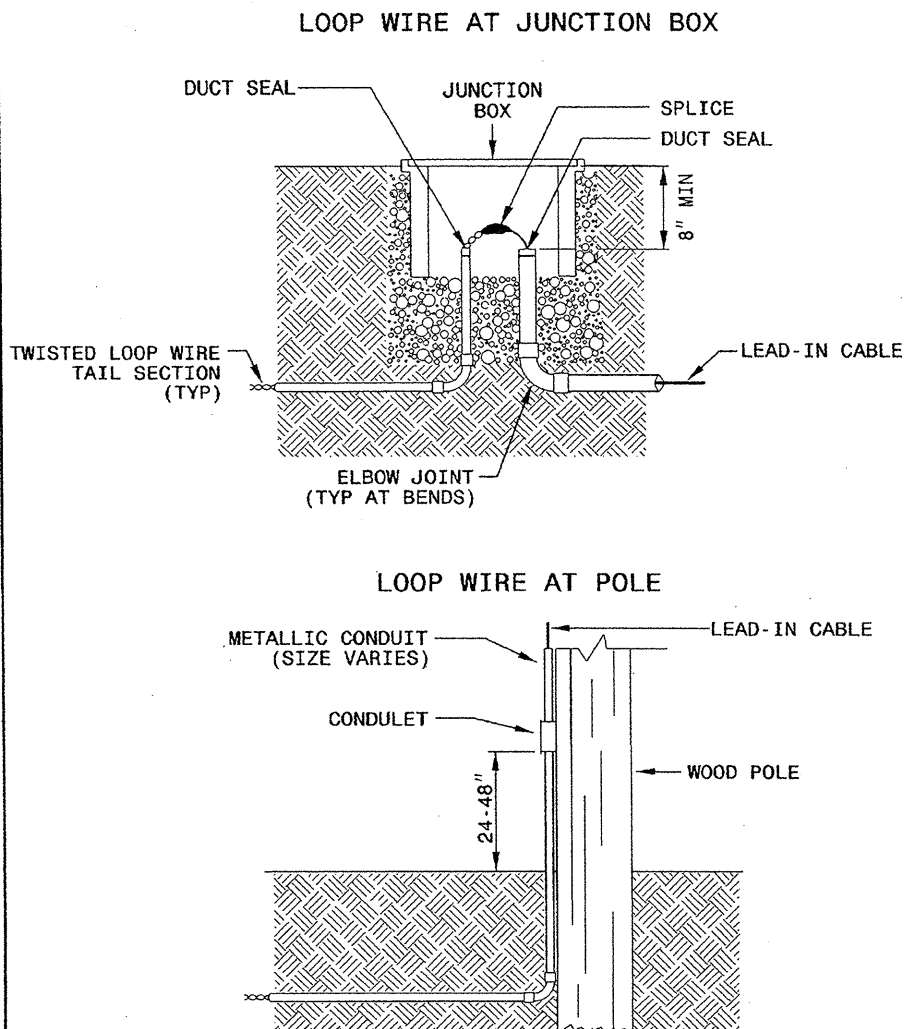
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
LOOP WIRE DETAILS

SHEET 2 OF 3
1725D01

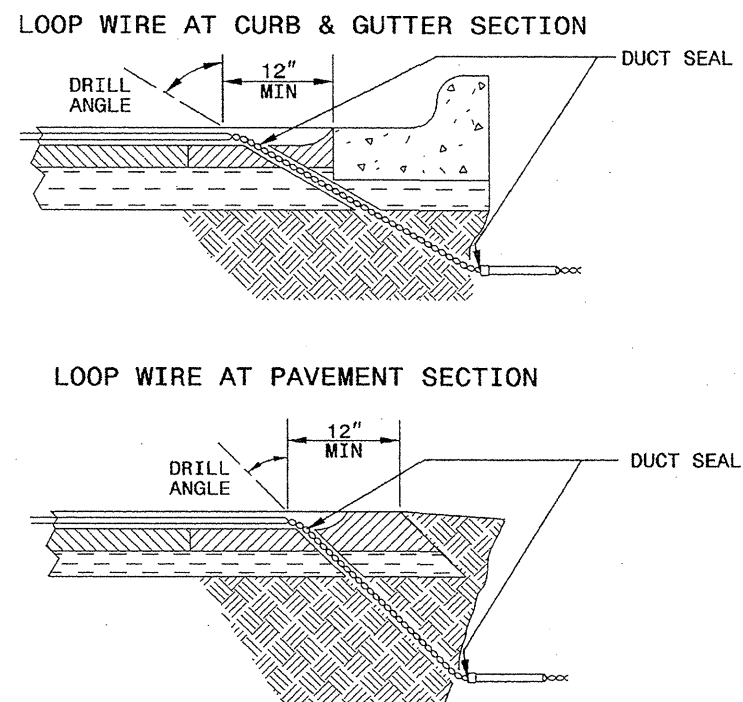
LOOP WIRE SPLICE POINT DETAILS



NOTE

SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

LOOP WIRE PAVEMENT EDGE DETAILS



NOTES

1. DO NOT EXCAVATE UNDER CURB AND GUTTER SECTIONS FOR CONDUIT INSTALLATION.
2. TWIST LOOP WIRE TAIL SECTIONS FROM WHERE LOOP WIRE TAIL LEAVES SAW CUT TO JUNCTION BOX, INCLUDING THROUGH CONDUIT.
3. BEFORE SEALING LOOPS, INSTALL DUCT SEAL WHERE LOOP WIRE TAIL SECTION LEAVES SAW CUT IN PAVEMENT AND AT ENTRANCE OF CONDUIT TO JUNCTION BOX.

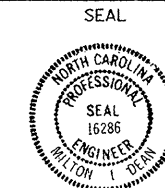
STATE OF NORTH CAROLINA
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
LOOP WIRE DETAILS

SHEET 2 OF 3
1725D01

See Plate for Title



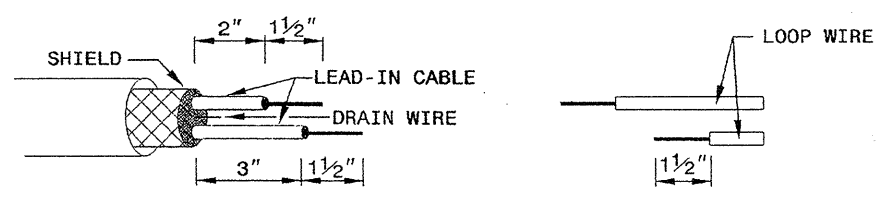
Signature: *Wilton I. Dean* 11/24/08
DATE

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 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

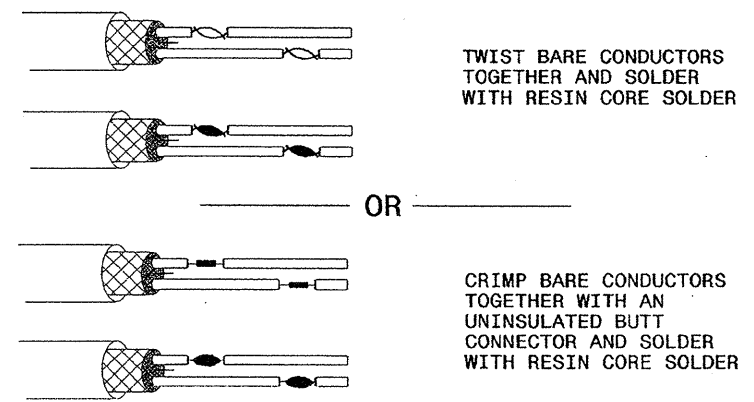
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 SPLICING FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE

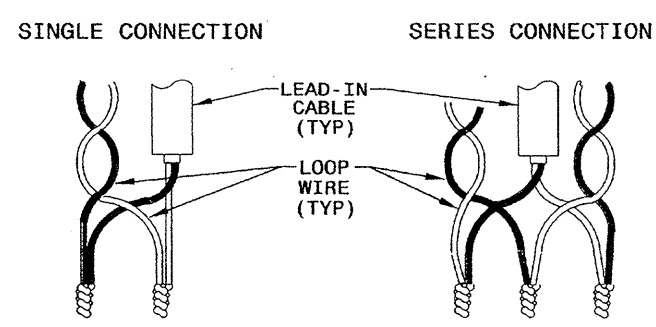


STEP 2. CONNECT AND SOLDER

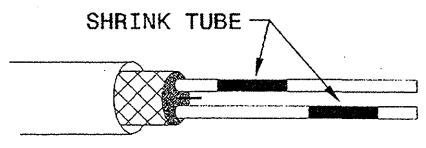


BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

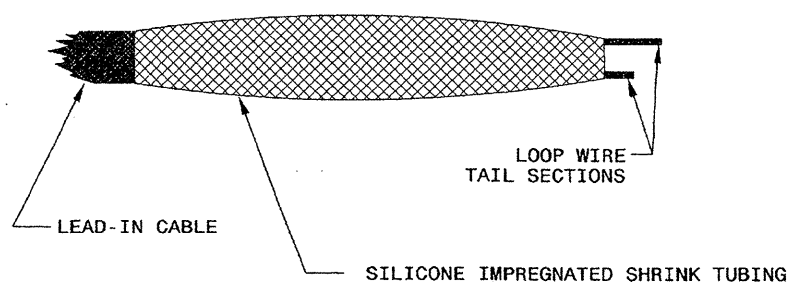
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



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ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 SPLICING FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

Matthew J. Dean 11/24/08
SIGNATURE DATE

24-n01-2008-09136 standard plate sheets 1725D01.mxd 2/3/11